This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A clutch for transferring torque, said clutch comprising:

a cam that is capable of rotating about an axis and has a camming surface;

a rotor that is also capable of rotating about the axis and has piston cavities that open out of it, the rotor further enclosing a fluid chamber;

pistons located in the piston cavities of the rotor where they are exposed to the fluid chamber, the pistons projecting from the piston cavities toward the camming surface of the rotor, which they contact;

a rheological fluid in the fluid chamber to project at least one piston farther from the rotor in response to the retraction of the another piston farther into the rotor; and

activation means for varying the viscosity of the rheological fluid to control slippage between the cam and rotor.

2. (Original) A clutch according to claim 1 wherein the cam is configured such that when the pistons are in contact with it, the volume of the fluid chamber remains substantially constant irrespective of the angular position of the cam relative to the rotor.

3. (Original) A clutch according to claim 2 wherein the rotor contains a connecting cavity that is in communication with the piston cavities, and the fluid chamber includes the connecting cavity.

4. (Original) A clutch according to claim 3 wherein the pistons do not occupy the piston cavities in their entireties, and the fluid chamber also includes the unoccupied regions of the piston cavities.

5. (Original) A clutch according to claim 2 wherein the camming surface surrounds the axis and is presented away from the axis.

6. (Original) A clutch according to claim 2 wherein the activating means is an electrical coil.

7. (Original) A clutch according to claim 6 wherein the coil surrounds the rotor.

8. (Original) A clutch according to claim 7 wherein the rotor surrounds the cam.

9. (Original) A clutch according to claim 2 wherein the cam has multiple lobes along its camming surface, with the lobes being arranged at equal circumferential intervals around the axis, and the pistons are in number at least twice as many as there are lobes on the cam.

10. (Original) A clutch according to claim 9 wherein the pistons are arranged at equal circumferential intervals around the axis.

11. (Original) A clutch for transferring torque, said clutch comprising:

a cam which is rotatable about the axis and has a camming surface which surrounds the axis, there being multiple lobes along the camming surface;

a rotor located around the axis and also being rotatable about the axis, the rotor enclosing a fluid chamber and further having piston cavities which open toward the camming surface on the cam;

a rheological fluid in the fluid chamber, whereby viscosity of the fluid is variable;

pistons located in the piston cavities where they are exposed to the rheological fluid in the fluid chamber, the pistons projecting from the piston cavities toward the camming surface of the cam which they contact;

the configuration of the camming surface on the cam and the location and number of the pistons in the rotor being such that the volume of the fluid chamber remains essentially constant irrespective of the angular position of the cam relative to the rotor, whereby the rheological fluid holds the pistons against the camming surface;

an electrical device for controlling the viscosity of the rheological fluid and thus controlling the slippage between the cam and rotor.

12. (Original) A clutch according to claim 11 wherein the electric device is a coil.

13. (Original) A clutch according to claim 12 wherein the coil surrounds the rotor, and the rotor surrounds the cam.

14. (Original) A clutch according to claim 12 wherein the pistons are arranged at equal circumferential intervals around the axis and in number are twice as many as there are lobes on the cam.

15. (Original) A clutch assembly according to claim 11 wherein the pistons do not occupy the entireties of the piston cavities; wherein the piston cavities open into a connecting cavity within the rotor and are in communication through the connecting cavity; and wherein the connecting cavity together with the regions of the piston cavities not occupied by the pistons form the fluid chamber.

16. (Original) A clutch according to claim 12 wherein the piston cavities are cylindrical.

17. (Original) A process for transmitting torque between first and second members that are capable of rotation about a common axis, said process comprising:

providing a camming surface on the first member, with the camming surface having lobes;

providing a second member with piston cavities that open out of the second member toward the camming surface on the first member and also with a fluid chamber to which the piston cavities are exposed;

providing pistons in the piston cavities of the second member, with the pistons extending to and contacting the camming surface on the first member;

providing a rheological fluid that fills the fluid chamber;

applying torque to one of the members; and

controlling the viscosity of the rheological fluid to render it viscous enough that the pistons grip the camming surface of the first member sufficiently to enable torque to be transferred between the members.

18. (Original) The process according to claim 17 wherein the rheological fluid is sensitive to magnetic fields, with its viscosity being dependent on the strength of a magnetic field in which it lies; and further comprising providing a magnetic field within which the rheological fluid lies and varying the strength of the magnetic filed to render the rheological fluid viscous enough to enable the pistons to transfer torque.

19. (Original) The process according to claim 15 wherein the camming surface on the first member has multiple lobes, and the second member surrounds the first member.